Teamwork Training in Sport: A Pilot Intervention Study

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The Version of Record of this manuscript has been accepted for publication and is available in the *Journal of Applied Sport Psychology*, doi: 10.1080/10413200.2018.1518277, http://www.tandfonline.com/

Date of acceptance: August 23, 2018

Abstract

The purpose of this study was to test the efficacy of a novel team building intervention that targets teamwork in sport. Utilizing a 10-week pilot non-randomized controlled intervention design, 12 interdependent sports teams comprising 187 athletes were assigned to one of two conditions: an experimental condition where teams participated in two teamwork training sessions at weeks 2 and 6 of the study (six teams, 94 athletes) or a no-training control condition (six teams, 93 athletes). Teamwork was measured at weeks 1, 5, and 10 of the study. Overall, significant improvements in teamwork were shown for the experimental teams from baseline to week 5; these effects were maintained through week 10 of the study. In contrast, no significant changes in teamwork were observed for teams in the control condition over these 10 weeks. The results provide evidence that teamwork training can enhance the extent to which members of a sports team work effectively together.

Lay Summary: In order for sport teams to be successful, it is important that team members work well together. In this study, we found that teamwork can be enhanced through a novel team building intervention.

Teamwork Training in Sport: A Pilot Intervention Study

Team building has been described as "a method of helping the group to (a) increase effectiveness, (b) satisfy the needs of its members, or (c) improve work conditions" (Brawley & Paskevich, 1997, p. 13). As an umbrella term (Martin, Burke, & Carron, 2009), sport teams can be "built" (or enhanced or improved; Brawley & Paskevich, 1997) in a variety of ways such as by targeting group processes (e.g., communication), emergent states (e.g., cohesion), coach-athlete relationships, leadership behaviours, and so on. Within the context of sport, the vast majority of previous research on team building has focused on developing team cohesion (Beauchamp, McEwan, & Waldhauser, 2017; Bruner, Eys, Beauchamp, Côté, 2013; Martin et al., 2009). Despite its prevalence, the effectiveness of these interventions targeting team cohesion has been mixed. For example, based on a meta-analysis of team building interventions in sport, Martin et al. (2009) concluded that "although people continue to use team building in hopes of increasing cohesion, it may not have the desired impact" (p. 15). Moreover, in a review using a citation network and path analysis approach, Bruner et al. (2013) concluded that "the restricted focus on cohesion suggests that research conducted within the area of team building in sport is relatively narrow" (p. 37). As such, there have been calls to examine team building frameworks that target other constructs, particularly those focused on group *processes* (Beauchamp et al., 2017; Bruner et al., 2013; Collins & Durand-Bush, 2015).

One group process that has been subject to considerable research across an array of team contexts outside of sport (e.g., business, health care, academia, military) is *teamwork*. Within this literature, teamwork is identified as a group process in that it comprises observable behaviors that describe the nature of member interactions, which lead to adaptive team outcomes (Marks, Mathieu, & Zaccaro, 2001; Rousseau, Aubé, & Savoie, 2006). In contrast, team cohesion is

characterized as an *emergent state*—that is, a by-product of team experiences that stems from other variables including teamwork and team performance (Marks et al., 2001). Although (a) it would seem that teamwork is an important construct to consider within sport and (b) there has been extensive research on teamwork across many other team settings, efforts to examine teamwork in sport have only recently begun.

In an initial attempt to better understand teamwork, McEwan and Beauchamp (2014) conducted a theoretical and integrative review of the extant teamwork literature in order to provide a definition and forward a theoretical framework of teamwork in sport. Specifically, they defined teamwork as a "collaborative effort by team members to effectively carry out the independent and interdependent behaviors that are required to maximize a team's likelihood of achieving its purposes" (McEwan & Beauchamp, 2014, p. 233). Their theoretical framework includes five overarching components of teamwork which are comprised of 14 behavioural dimensions. Four of these components—*preparation*, *execution*, *evaluation*, and *adjustments*—involve behaviours focused on the regulation of team performance (RTP), while the fifth aspect—*management of team maintenance (MTM)*—includes interpersonal behaviours that function to keep the team together. *Preparation* involves behaviours that occur prior to a team task (e.g., a competition in sport), which includes specifying a team's mission/reasons for being together, team goals, and action plans. *Execution* involves behaviours that are enacted during a team task/competition (i.e., an 'action episode'; cf. Marks et al., 2001), including communication, cooperation, and coordination. Following a team task/competition, *evaluation* involves monitoring team performance and various conditions affecting performance, while *adjustments* includes problem solving how team performance can be improved, applying innovative strategies to enhance team effectiveness, providing performance-related verbal

feedback to fellow team members, and helping teammates improve their personal performance. Finally, *MTM* involves managing conflict between teammates and providing interpersonal support to one another; hence, these behaviours focus on ensuring that personal and/or interpersonal issues do not prevent a team from being successful.

To date, this theoretical framework has been used to guide the development of a psychometrically-sound measure of teamwork in sport (McEwan, Zumbo, Eys, & Beauchamp, 2018). What is not yet clear is whether teamwork can be improved through intervention within sport. As teamwork has been found to be associated with an array of positive individual and group outcomes (LePine, Piccolo, Jackson, Mathieu, & Saul, 2008), there have been efforts to target this construct through intervention across an array of settings outside of sport. Several training strategies have been used to target teamwork, including 'feedback', 'team goal setting', 'individual goal setting', 'team charters', 'simulations', 'team briefs', and 'team debriefs' (McEwan, Ruissen, Eys, Zumbo, & Beauchamp, 2017)—see Table 1 and Procedure. A recent meta-analysis (McEwan et al., 2017) of controlled intervention studies found that teamwork training is particularly effective at enhancing teamwork (and, in turn, team performance) when (a) multiple dimensions of teamwork are targeted, and (b) experiential activities that allow members to actively learn about, practise, and continually develop teamwork are implemented (as opposed to more passive strategies such as having team leaders provide didactic lectures to members on the importance of working well together). Moreover, although the positive effects of teamwork training were evident across an array of contexts—including health care, academia, military, aviation, business/industry, as well as in laboratory settings—there was a distinct absence of these intervention studies within sport.

The Current Study

With the above evidence in mind, the overall objective of this study was to develop, and examine the efficacy of, a conceptually-driven and evidence-informed intervention focused on enhancing the extent to which team sport athletes work effectively together. As this was the first experimental study (to our knowledge) to specifically target teamwork within sport, it was important to first consider the existing team building research within this context in order to optimally deliver this type of intervention. Three bodies of research in particular were considered in designing our teamwork training intervention. First, with regard to method of delivery, it has been shown that both *direct* (wherein an external consultant/interventionist delivers the team building programme directly to the team/athletes) and *indirect* (wherein an interventionist works with a coach who then implements the programme) approaches are equally effective in conducting team building interventions in sport (Martin et al., 2009). As such, we implemented a novel approach whereby we incorporated *both* types of delivery methods. We also sought to ensure that the intervention was specific to the needs of each participating team, as opposed to a generic, 'one-size-fits-all' approach. To do so, the core component of the intervention involved providing feedback to each team in terms of their current levels of teamwork and then supplementing that feedback with a second training strategy that targeted the areas of teamwork that were most in need of improvement (based on a team 'needs assessment'; Dale & Wrisberg, 1996). Third, it was deemed important to note that real-world teams are dynamic and can change over the course of a team's season. As such, it has been suggested that team building interventions should not merely include a single session; rather, interventions should take place over multiple time-points, ideally over the course of a team's season (Brawley & Paskevich, 1997; Martin et al., 2009). As such, we sought to deliver and examine an intervention that was delivered over the course of the season and included a follow-up/booster session. Such an

approach affords teams with multiple opportunities to examine how they could improve in their team functioning as well as the necessary time (both within and outside of the team building sessions) to continually practise/develop teamwork (cf. McEwan et al., 2017; see Figure 1).

In summary, the purpose of this study was to examine whether teamwork in sport can be enhanced through teamwork training. Specifically, a 10-week pilot controlled intervention study was carried out to determine whether changes in teamwork differed between teams that participated in a teamwork training programme (which incorporated the seven aforementioned training strategies) compared to teams who did not receive training. We hypothesized that teams who received training would show significantly greater increases in teamwork scores from weeks 1 to 5 and from weeks 5 to 10 of the study in comparison to control teams. Should support for this programme be shown, this would provide researchers, applied sport psychology consultants, and coaches with a viable evidence-based approach to improving the extent to which athletes work effectively together on sports teams.

Methods

Participants

Following institutional ethics approval, twelve interdependent sports teams consisting of 187 athletes (M_{age} = 16.9 years, SD_{age} = 4.4 years; 50% female) provided informed consent and agreed to participate in the study. Information on each team is provided in Table 2. Six teams were assigned to the experimental (training) condition while the other six were assigned to the no-training control condition. Although we originally sought to conduct a randomized controlled trial, three basketball teams, two water polo teams, and two soccer teams in the study were from the same organizations. As such, full randomization was not possible as the coaches of these teams interacted on regular basis (e.g., at their organization's practice facility); thus, in order to

avoid the possibility of contamination between conditions, these teams were clustered/assigned to the same experimental condition. Hence, the study followed a 10-week non-randomized controlled intervention design. Teamwork was assessed at three time-points of the study: week 1, week 5, and week 10. Two teams from the experimental condition (teams 1 and 2) and one team from the control condition (team 7) were only able to participate in the first two measurement time-points of the study, as they had less than ten weeks remaining in their season at the time in which they wanted/agreed to participate. For all other teams in the study, baseline assessments were conducted approximately one month after the beginning of their respective seasons.

Materials

Teamwork was measured using the *Multidimensional Assessment of Teamwork in Sport (MATS)*, a 66-item questionnaire that examines each of the 14 dimensions of teamwork. Each item is scored on a 7-point Likert-type scale from 1 (strongly disagree) to 7 (strongly agree). The preparation subscale consists of the 'mission analysis' (5 items), 'goal specification' (6 items), and 'planning' (6 items) dimensions (e.g., "Our team has identified an overall purpose for being together"). The execution subscale consists of the 'coordination' (4 items), 'cooperation' (4 items), and 'communication' (5 items) dimensions (e.g., "Teammates communicate an ideal amount with each other"). The evaluation subscale consists of the 'performance monitoring' (6 items) and 'systems monitoring' (4 items) dimensions (e.g., "We evaluate our progression towards team goal accomplishment"). The adjustments subscale consists of the 'problem solving' (4 items), 'innovation' (4 items), 'intrateam coaching' (4 items), and 'backing up' (5 items) dimensions (e.g., "Our team applies creative approaches if we are not performing well"). Finally, the MTM subscale consists of the 'integrative conflict management' (4 items) and 'psychological support' (5 items) dimensions (e.g., "Conflicts between team members are solved

in a respectful manner"). Participants' perceived level of teamwork was estimated by calculating their mean scores on each of the dimensions within the subscale; a score was then calculated based on a team's mean subscale score on those dimensions (e.g., a score for preparation was provided by calculating a team's mean scores for coordination, cooperation, and communication). Previous research supports the validity of data derived from the MATS with athletes as young as 13 years of age; the MATS displays a Grade 7 reading ability score (Flesch, 1948; Kincaid, Fishburne, Rogers, & Chissom, 1975; McEwan et al., 2018). Evidence of good model-data fit and reliability for each of the subscales corresponding to five measurement models in relation to the preparation, execution, evaluation, adjustments and MTM aspects of teamwork has also been shown (McEwan, et al., 2018). In the current study, for each subscale, ordinal composite reliability scores were ≥ .88 (Zumbo, Gadermann, & Zeisser, 2007).

Procedure

The layout of this study for the experimental condition is noted below. Teams in the control condition also completed the MATS at weeks 1, 5, and 10, but did not partake in any training sessions or receive email support. All teams were debriefed on the study's purposes and hypotheses at the end of the week 10 study session.

Week 1: Introduction: Time 1 completion of the MATS (approximately 30 minutes).

Week 2: Training session 1 (approximately 60 minutes): Teams received feedback on each dimension of teamwork as well as a supplemental training strategy (see below).

Week 3-4: Period designed for teams to continue implementing strategies; open for email support between the coach and interventionist.

Week 5: Time 2 completion of the MATS.

Week 6: Follow-up training/booster session (approximately 60 minutes): Teams received feedback on each dimension of teamwork as well as a supplemental training strategy.

Weeks 7-9: Period designed for teams to continue implementing strategies; open for email support between the coach and interventionist.

Week 10: Time 3 completion of the MATS.

Summary of Training Sessions

All training sessions were led by the first author. These sessions were designed based on previous studies of teamwork training (in other team contexts) and team building in sport (see below). To begin the training, all coaches and players of teams in the experimental condition received a printed workbook containing relevant information related to teamwork that they worked through over the course of the intervention (for a sample workbook, see Appendix A). These sessions involved both the players and coaches of a team to ensure that they were all 'on the same page' (cf. Dale & Wrisberg, 1996) with regard to their current levels of teamwork, as well as the supplemental training strategies that were to be implemented. The team was first provided with feedback in terms of their scores on each aspect of teamwork (as measured by the MATS during the previous week). Providing this feedback represented the core component of teamwork training, as this is the one training strategy that targets all 14 dimensions of teamwork (see Table 1). To provide feedback, the workbook included a graphical representation of a team's mean teamwork scores on all of the five subscales of the MATS—preparation, execution, evaluation, adjustments, and MTM. Then, focus was given to each of the individual dimensions of teamwork by presenting separate graphs of each of those five aspects. A booster session was included in order to provide an opportunity for teams to reflect on how they had progressed in terms of their teamwork, assess whether they had followed through on the commitments they

made at the first training session, and plan how they could use any additional strategies in order to continue to foster teamwork for the remainder of their season.

For any dimensions that appeared to be particularly lagging and most in need of improvement (i.e., the aspect of teamwork that was lowest relative to the other four aspects based on the team's scores on the MATS), an additional training strategy was incorporated as a supplemental component of the training sessions (see Table 1) by considering (a) previous studies on each of these techniques, and (b) how best to carry out these strategies within the context of sport. Specifically, to target the preparation aspect of teamwork (*mission analysis*, *goal specification*, and *planning*), this additional training strategy involved 'team goal setting' along with 'briefs' and 'debriefs'. These three training techniques were also used to target the evaluation aspect of teamwork (*performance monitoring* and *systems monitoring*) as well as the *problem solving* and *innovation* dimensions (within the adjustments aspect). To target the execution dimensions (*communication*, *coordination*, and *cooperation*), the 'simulation' strategy was incorporated. To target the *intrateam coaching* and *backing up* dimensions (within the adjustments aspect of teamwork), the 'individual goal setting' technique was used. Finally, 'team charters' were used to target the MTM aspect of teamwork (*psychological support* and *conflict management*). This approach of tailoring an intervention to specifically address the needs of each individual team—as opposed to a generic, 'one-size-fits-all' approach—is taken from past teamwork training research (e.g., Salas et al., 2008) and from behaviour change models of psychology (Michie, van Stralen, & West, 2011). Three of the teamwork strategies—team goal setting, individual goal setting, and team charters—followed a *direct* intervention approach, whereby the interventionist implemented the strategy with the team. The other three strategies—simulations, briefs, and debriefs—were more *indirect* in the sense that, although the trainer

described and developed introductory activities related to these techniques, it was ultimately up to the coaches and players to continue to implement them over the course of their season.

Team goal setting. Following recommendations from Eys et al. (2006), team members were first provided with an overview of how the exercise would proceed. They were then divided into subgroups of approximately four players in order to ensure that all members on the team had an opportunity to contribute their ideas. The subgroups answered one of three questions—each corresponding to the three teamwork preparation dimensions—before being brought back together to present their answers to the rest of the team. Coaches were also given an opportunity to offer suggestions and their own perspectives on each question during the large group discussion. To target *mission analysis,* team members were asked what they felt their overall team purposes/objectives for the season should entail (e.g., to win a certain competition or league championship; to have fun). To target *goal specification*, the players were asked what they needed to do throughout the season in order to achieve their purposes. Specifically, members created a list of performance goals that they sought to achieve over the course of the season (e.g., in hockey, the average number of goals scored or penalty minutes per game). To target the *planning* dimension, members were asked to create specific action plans of what they needed to do in order to achieve their performance goals (and, in turn, their overall objectives). For example, if a basketball team felt they needed to get better at shooting, they were encouraged to think about how these improvements could be made (e.g., spending a certain amount of time during practice to work on shooting; creating offensive plays that result in more quality "high-percentage" opportunities).

The team's responses to all questions were then compiled into a document which was printed for the team. This document included the team's purposes, performance goals, and action

plans that they had created. The players were each given a copy of this document, which they added to their individual workbook. The purpose of providing the team with these handouts was to facilitate monitoring of the team's goals and foster teamwork on an ongoing basis (i.e., following the consulting sessions). The team mission, goals, and action plans were also revisited at the follow-up training session to determine the team's perceived progress. These sessions were carried out in a manner similar to the initial training sessions, whereby players first discussed their responses to questions in subgroups and then with the team as a whole. At these sessions, the team was asked whether it felt it was on track towards achieving its goals/purposes (i.e., *performance monitoring*) and whether there are certain environmental factors affecting their progression (i.e., *systems monitoring*). If the team felt it had not progressed well towards achieving its goals/purposes, members were asked to identify specific reasons why this had occurred (i.e., *problem solving*) and if any modifications to the team's approaches (e.g., goals, action plans) needed to be made (i.e., *innovation*). Hence, this booster session targeted the monitoring and adjustments aspects of teamwork as well as the preparation aspect. As with the initial team goal setting session, teams were sent a document that reflected any updates to the team's goals and/or action plans for achieving the team's mission.

Briefs and Debriefs. As highlighted above, the team goal setting technique targets the preparation aspect of teamwork (at the initial consulting sessions) as well as the evaluation and adjustment aspects (at the follow up sessions) from a "broad" perspective (i.e., the team's season as a whole). To target these aspects at a more specific, game-to-game perspective, the interventionist introduced the concepts of briefing and debriefing (Bethune, Sasirekha, Sahu, Cawthorn, & Pullyblank, 2011) at the training session, following the goal setting activity. The purpose of briefs and debriefs is similar to goal setting in that it is meant to foster preparation,

evaluation, and adjustments. The difference between these techniques is that the goal setting strategy operationalized above is meant to enhance these three aspects over the course of a team's entire season, whereas briefs before and debriefs after a game are meant to enhance them on a more short-term, game-to-game basis. The information that could be targeted in these (de)briefs as well as the manner in which they were conducted were guided by existing research on this technique—see Tannenbaum and Cerasoli (2013) for a review.

Teams were encouraged to build these briefings and debriefings into their pre- and post-game meetings, respectively. As all teams in this study were already conducting these meetings to some extent, coaches were encouraged to incorporate these briefs and debriefs into their existing meetings. These (de)briefs were described as a way of providing a more structured approach to these team reviews. The interventionist met with the coach to discuss some of the points that could guide the conversations in these briefs. The importance of involving all members of the team in these meetings (rather than just the coach and certain players, such as team captains) was also reiterated. Specifically, during the pre-competition briefs, teams were encouraged to discuss *what* needed to be done in order for them to be successful in the competition (i.e., *goal setting*) and *how* the team would achieve these goals (i.e., *planning*). Some points that could guide the conversations during briefs included: reinforcing the team's strengths; noting the strengths, tendencies, and weaknesses of the opposing team and how the team could use these points of information to their advantage; and reiterating the importance of coordinating, cooperating, and communicating in the upcoming team task. Then, during the debriefs following the competition, teams could address: whether their goals for the game/ competition had been met (i.e., *performance monitoring*); the reasons why they were or were not successful in achieving each goal (i.e., *problem solving*), with consideration for any conditions

that influenced performance (i.e., *systems monitoring*); as well as the quality of teamwork execution behaviours and how these affected the team's performance. Thereafter, preliminary goals and plans of action for subsequent team tasks, including what they needed to continue to do and/or what needed to change (i.e., *innovation*), could be introduced.

Simulations. To target teamwork execution behaviours, training began with a discussion of members' perceptions of what makes for effective *communication*, *coordination*, and *cooperation*. We utilized a similar approach to the team goal setting and team charter activities described above, wherein team members first discussed these three main questions (one devoted to each of the dimensions of teamwork execution) in subgroups of three to four players. Groups then presented their answers to the entire team before answering the next question. While the exact questions depended on the team's sport, the essence of these questions was to have players reflect upon what ideal coordination looks like, how they can best support each other in order to maximize cooperation, and what comprises effective communication. Members were encouraged to focus on specific behaviours that they could implement while training/playing their sport (e.g., communicating certain keywords during specific circumstances) rather than providing vague or clichéd responses (e.g., "we need to talk to each other"). Once the list of key behaviours was made for each dimension, a synthesized document was sent to each player to add to their workbook.

The team was then instructed to work on these specific behaviours during team practices utilizing simulation-based training. Simulations involve mimicking environments and situations that the team anticipates are likely to emerge during competitions. This provides team members with an opportunity to learn, practise, and receive feedback on their performance while they are executing a team task (Weaver et al., 2010). All teams in our study noted that they were already

engaging in some form of simulation-type activities (e.g., scrimmages against 'scout teams', mock races) as a means of enhancing technical/taskwork skills. Therefore, to maximize the feasibility and usefulness of this technique, we suggested that teams integrate simulation-based teamwork training into their existing practice activities (as opposed to creating an entirely separate team activity), whereby teams not only focused on technical skill execution but also on learning and practising the specific communication, cooperation, and coordination behaviours they had previously identified. It was emphasized to teams that these specific teamwork behaviours must be practised regularly in order to translate what they discussed in the training sessions into actual competition, just as the team would do to enhance technical task performance. It was also suggested that the team aim to replicate the competition environment as closely as possible when carrying out these simulation activities.

Individual goal setting. To foster *intrateam coaching* and *backing up* behaviours (and also enhance the preparation dimensions at the individual member level), an individual goal setting technique was employed (which was adapted from the team goal setting technique described above). Specifically, team members were encouraged to identify one or two personal performance-related goals they had for the season. When creating these goals, members were instructed to consider the team's goals and mission, their own strengths and limitations as an individual athlete, as well as their role within the team. Players were asked to set at least one interdependent teamwork skill that they could work on with teammates during practices. Members first set their goals individually and then presented them to the entire team. Having members declare their goals to their teammates was meant to facilitate support among teammates and to help players finalize their goals by obtaining feedback from their teammates. After all members presented their individual goals to the team, they were asked to pair up with a

teammate or a small group of teammates who would help them work on their goals during team practices (and outside of practices, if applicable). These goals were written down directly into the players' workbooks and signed by themselves as well as a teammate who served as a "witness" to the player's goals and commitments. Coaches were then encouraged to provide specific times during team practices/training to allow players to work on their individual goals together. These goals were revisited at the follow-up training session to ensure that players followed through with the commitments that they set in terms of providing intrateam coaching and backing up behaviours to one another.

Team charter. To target the MTM aspect of teamwork, teams created a team charter, which provided teams with an opportunity to discuss and, ultimately, agree on the team's expectations related to the interpersonal behaviours between members (Aaron, McDowell, & Herdman, 2014; Barron, 2000). This included a discussion of the team's overall purposes/objectives (i.e., *mission analysis)* as well as the behavioural norms associated with the *psychological support* and *integrative conflict management* dimensions of teamwork. The process by which this strategy was carried out was similar to that of the team goal setting sessions; that is, players first discussed their responses to questions in subgroups and then with the team as a whole. After first specifying the team's purposes for the season, members discussed how they would conduct themselves in various situations (e.g., at team meetings; during competitions or public events), their commitments to their teammates in terms of providing interpersonal support to each other (e.g., encouraging one another; players asking for and providing practical assistance if need be), and how they would resolve interpersonal conflicts if they emerged (e.g., being honest and respectful; striving to find solutions that will be most likely to help the team achieve its goals). As with team goal setting, a document of the team

charter was created for each player to add to their individual workbook. These charters were also revisited at the follow-up training session to ensure that team members followed through with the commitments that they established during the initial consulting session with regard to these team maintenance behaviours.

Data Analysis

Data were analyzed using *SPSS* software (Version 24; IBM SPSS Predictive Analytics, Chicago IL). Missing data were handled using pairwise deletion. The primary outcome of interest for this study was change in teamwork across the three measurement time-points. In order to best address this research question (Field, 2009), change scores for each team from baseline (i.e., time 1) to week 5 (i.e., time 2) and from week 5 to week 10 (i.e., time 3) were computed for preparation, execution, evaluation, adjustments, and MTM. To examine the efficacy of the intervention, ten separate time by condition Mixed Effects Analyses of Variance (ANOVAs) were carried out—five assessing changes in the five aspects of teamwork between week 1 and week 5, as well as five assessing changes from week 5 and week 10. In each model, condition was specified as a fixed factor, while team was specified as a random factor—this was done in order to account for the nesting of the data (i.e., athletes within teams). We also conducted two repeated measures *t*-tests to examine the changes among experimental condition teams in the main aspect of teamwork that was targeted with the supplemental training strategy within a team's training sessions (i.e., one of preparation, execution, evaluation, adjustments, or MTM at the week 2 and week 6 sessions). The first *t*-test examined changes in this targeted variable between week 1 and week 5, while the second test examined changes in the targeted variable from week 5 and week 10.

Results

Table 3 provides a summary of each team's mean scores for the five aspects of teamwork at baseline, week 5, and week 10. A total of 187 athletes participated in the intervention at time 1 and/or time 2 (any athletes who missed practice for the first assessment were able to participate in the remainder of the intervention). There were 164 participants at the time 1 assessment, 132 participants at time 2, and 84 participants at time 3 (three teams were unable to take part in the third time-point as they had less than ten weeks remaining in their season following their baseline assessment). There were no significant differences in any of the aspects of teamwork with regard to baseline levels of teamwork between participants from teams who took part in the entire study compared to those who dropped out.

Results from the five Mixed Effects ANOVAs showed that teamwork training had a significant effect on changes in teamwork from baseline to week 5. Specifically, the effect of condition was significant for change scores of: Preparation, $F(1, 102) = 19.93$, $p < 0.001$, $\eta_p^2 = .16$ (large effect); Execution, $F(1, 102) = 8.24$, $p = 0.005$, $\eta_p^2 = .08$ (medium effect); Evaluation, $F(1, 102) = 20.35$, $p < 0.001$, $\eta_p^2 = .17$ (large effect); Adjustments, $F(1, 102) = 20.45$, $p < 0.001$, $\eta_p^2 = .17$ (large effect); and MTM, $F(1, 101) = 20.88$, $p < 0.001$, $\eta_p^2 = .17$ (large effect). The *t*-test analyzing change in the score of the teamwork aspect that was targeted through the supplemental training strategy (see bolded values under 'Week 5 scores' in Table 3) resulted in a significant increase in this variable, $t(67) = 6.50$, $p < .001$, $d = 1.09$ (large effect).

Although the mean teamwork scores were all higher for the experimental condition compared to the control condition at week 10, the five mixed effects ANOVAs revealed no significant differences between conditions with regard to changes in any of the teamwork scores from weeks 5 to 10. Specifically, the effect of condition was not significant for change scores of:

Preparation, $F(1, 56) = 0.41$, $p = .522$, $\eta_p^2 = .01$; Execution, $F(1, 56) = 1.38$, $p = .245$, $\eta_p^2 = .02$; Evaluation, $F(1, 56) = 0.81$, $p = .372$, $\eta_p^2 = .01$; Adjustments, $F(1, 56) = 2.62$, $p = .111$, $\eta_p^2 = .05$; or MTM, $F(1, 55) = 3.60$, $p = .063$, $\eta_p^2 = .06$. However, the *t*-test examining changes in the aspect of teamwork that was targeted with the supplemental training strategy (see bolded values under 'Week 10 scores' in Table 3) revealed a significant improvement in this variable, $t(29) = 2.17$, $p = .038$, $d = .49$ (medium effect).

Discussion

The results of this study provide preliminary evidence that teamwork in sport can be improved through intervention. Specifically, significant effects from week 1 to week 5 were evident, such that improvements in all aspects of perceived teamwork for teams who took part in teamwork training were greater than changes for control condition teams (whose scores stayed approximately the same from baseline to week 5). Moreover, significant improvements were also shown in the specific aspect of teamwork that was targeted through the supplemental training strategy at both the first (at week 2) and second (at week 6) training sessions. These are noteworthy findings, as sports organizations are often looking for ways to enhance the functioning of their teams. The programme described in this study, thus, provides a framework for coaches and applied practitioners seeking to enhance the extent to which team members work well together.

The effect sizes in each of the five aspects of teamwork from baseline to time 2 suggest that even a single training session (along with follow-up support) that includes feedback on the team's current levels of teamwork as well as a supplemental training strategy can have a substantive impact on the extent to which members perceive that they work effectively together. Specifically, large effect sizes were noted for changes in the preparation, evaluation,

adjustments, and MTM aspects of teamwork, while a medium effect size was found for changes in teamwork execution. The larger effect sizes in the former four aspects of teamwork compared to execution may be unsurprising due to the nature of the training sessions. That is, those four aspects take place during 'transition' episodes—between practices and games—whereas teamwork execution behaviours take place during 'action' episodes—while teams are actually playing their sport (cf. Marks et al., 2001). Since the teamwork training sessions also took place during a transition episode (i.e., at a team meeting between games and practices), one might reasonably expect the effects to be larger for the aspects of teamwork that were targeted in this episode. Put another way, even when teamwork execution behaviours were specifically targeted, the training still took place during a transition episode (i.e., in a team meeting) as opposed to during an actual action episode (e.g., during a competition or team scrimmage in practice). Thus, it would be worth testing whether future teamwork interventions could be conducted during an action episode in some way in order to derive a comparable large effect for teamwork execution training. Nonetheless, the results shown from baseline to time 2 suggest that meaningful improvements in perceived teamwork execution behaviours emerged following a single training session that involved teams reflecting on their communication, coordination, and cooperation.

In contrast to the above-noted results following the first teamwork training session, changes in perceived teamwork from week 5 to week 10 (following the second training session) were not significantly different between experimental and control teams. However, it should be noted that the improvements in teamwork for the experimental teams that were observed from baseline to time 2 were *maintained* at the time 3 assessment. That is, while teamwork scores for the control condition teams remained relatively unchanged throughout the entire 10 weeks of the study, the teamwork scores for the experimental teams increased over the first half of the study

and were then sustained through the second half. This is an important finding as it suggests that improvements in perceived teamwork made by teams who participated in the intervention did not dissipate and return to baseline levels over the course of the second half of the study. Although longer term studies (e.g., throughout a team's entire season) are required to determine conclusively whether (a) training results in *permanent* improvements in teamwork, and (b) whether alternative strategies can be implemented in order to provide *additional* improvements, our findings provide some initial evidence that the improvements made as a result of this team building approach are not merely temporary, short-term boosts.

Large and medium effects were also found with regard to experimental teams' changes in the specific aspect of teamwork that was trained, via the supplemental training strategy, in the first and second training sessions, respectively. The large effect from week 1 to 5 is unsurprising since—as noted above—significant improvements were shown in all aspects of perceived teamwork during this timeframe. The significant, medium-sized effect shown from weeks 5 to 10 is noteworthy however. Specifically, this result suggests that meaningful improvements in members' perceptions of teamwork can still occur as a result of a second training session. That is, although improvements may not occur in *all* aspects of teamwork following a booster training session (as was the case following the first session), they do appear to emerge when examining the *specific* aspect of teamwork that is targeted through the supplemental training technique in that session. Nonetheless, in future teamwork training studies, researchers could consider examining whether, and how, multiple aspects of teamwork can be enhanced following a second training session. For example, although we incorporated one supplemental teamwork training strategy in our team building sessions, researchers could examine whether more intensive

sessions that incorporate *multiple* training strategies result in additional improvements in teamwork from the midway to end points of a team's season.

In response to calls for research on improving team processes (e.g., Beauchamp et al., 2017; Bruner et al., 2013; Collins & Durand-Bush, 2015), this study provides preliminary support for the manner in which teamwork behaviours could be trained within the context of sport. These results contribute to both the team building in sport and broader team training literatures. First, this study provides evidence that team building should occur at multiple time-points over the course of a team's season rather than at a single time-point (cf. Martin et al., 2009)—this allows teams with multiple opportunities to experience, practise, and continually develop the multiple components of teamwork (cf. McEwan et al., 2017). Second, our study suggests that combining both direct and indirect methods of delivery may assist with this ongoing development of teamwork. Specifically, teams could consider involving an external expert consultant in team training sessions (i.e., direct approach) to assist with the initial implementation of various team building strategies (e.g., team goal setting, individual goal setting, team charters). Between these sessions, coaches could take the lead in carrying out the strategies that were initially developed with their teams (e.g., through briefs, debriefs, and simulation-based training), while also having access to the consultant for any support as needed (i.e., indirect approach).

The results of our study provide some support for the contention that team training can (and, where possible, *should*) be tailored to each participating team. That is, rather than carrying out a generic training program across teams (a 'one-size fits all' approach), researchers/interventionists could (a) measure team processes (such as teamwork), (b) provide the team with feedback on their scores in order for members to have an opportunity to reflect on

their areas of strength and weakness corresponding to these processes, and (c) implement an additional training strategy that best targets any areas of weakness. This process of using data from a questionnaire that measures the 14 teamwork processes conceptualized within the theoretical framework by McEwan and Beauchamp (2014) as part of the intervention also provides further evidence of construct validation (Messick, 1995) related to teamwork in sport—namely, the *consequential* aspect of validity, wherein data derived from a measure are used as "a basis for action" (p. 749). When taken together, this study provides support for the efficacy of a novel, conceptually-driven evidence-informed team building intervention that addresses an important team process within the context of sport.

Although this study may provide a useful addition to the applied sport psychology literature, it is not without limitations. First, although we had planned to conduct a randomized controlled trial in order to examine the efficacy of this teamwork training intervention, full randomization was not possible due to the nesting of several teams within the same organization. As a result, a non-randomized, clustered controlled trial design (wherein multiple teams from the same sports organization were all randomized to the same condition) needed to be employed in order to avoid any potential contamination between conditions. Although fully randomized controlled trials are not always feasible in behavioural research (as seen in the current study), they are considered the 'gold standard' of designs in intervention research (Sibbald & Roland, 1998). Thus, it would be prudent for researchers conducting future teamwork training studies to utilize fully randomized controlled study designs, if possible. Relatedly, the elements of a control condition could also be considered. In this study, control condition teams should be considered to comprise an 'inactive' control group as they did not receive any sort of 'active' component (related or unrelated to teamwork; i.e., attention-placebo control). There have been recent calls to

consider the elements of control conditions in behavioural research in order to confirm that the results obtained in controlled interventions are truly due to the *treatment* that experimental participants receive rather than being merely a result of a relatively smaller amount of *attention* that control participants receive (e.g., Karlsson & Bergmark, 2015). Examining the differences in teamwork between an experimental condition, a no-treatment control group, and an attention-placebo control group was beyond the purposes of this pilot study. These potential differences could be examined in future teamwork training studies (or, more generally, in other team building studies targeting any group variable).

It is also important to note the limitations of our sample—that is, 187 athletes, 12 teams (10 of whom were adolescent), and only six sports. Thus, future studies could examine the generalizability of our findings by testing the efficacy of teamwork training with teams of different age groups, sports, and competitive levels. These sample characteristics may also be important for researchers to consider when designing future teamwork training studies with different demographic groups (e.g., delivering the intervention with children versus adults). Moreover, although studies in other team contexts have shown that teamwork training has significant effects on other variables such as team performance (McEwan et al., 2017), only changes in self-reported teamwork were measured in this study. Hence, it would be prudent for future research to consider measuring changes in other salient sport outcomes (e.g., team performance, team cohesion, team member enjoyment) that result from teamwork training. These types of studies would also allow researchers to examine the various mediators and moderators of the effectiveness of teamwork training. We also did not systematically examine the extent to which teams followed through with implementing the teamwork strategies outside of the team building sessions where they were introduced (i.e., during weeks 3-4 and 7-9). Moreover, the

interventionist only contacted coaches during this time; contact between the players and the interventionist was not offered, which could also be seen as a limitation of the study. In sum, examining this component of a team building programme (i.e., time between training sessions) could be considered in future intervention studies.

Conclusion

The results of the current study are consistent with previous findings with regard to teamwork training (McEwan et al, 2017). Specifically, it was shown that an evidence-informed team building intervention that targets teamwork in sport can result in significant improvements in the extent to which members perceive that they work well together. This training programme has the potential to make an important contribution to the field of sport psychology by providing a framework for enhancing teamwork in sports teams. Future studies could now examine other components and outcomes of teamwork training programmes, including their impact on other salient variables (e.g., team performance), as well as the explanatory mechanisms and boundary conditions associated with these interventions.

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Table 1

Teamwork dimensions directly targeted by each training strategy.

	Feedback	Team Goal Setting	Briefs	Debriefs	Simulation	Individual Goal Setting	Team Charter
Mission Analysis	✓	✓				✓	✓
Goal Specification	✓	✓	✓			✓	
Planning	✓	✓	✓			✓	
Coordination	✓				✓		
Cooperation	✓				✓		
Communication	✓				✓		
Performance Monitoring	✓	✓		✓			
Systems Monitoring	✓	✓		✓			
Problem Solving	✓	✓		✓			
Innovation	✓	✓		✓			
Intrateam Coaching	✓					✓	
Backing Up	✓					✓	
Psychological Support	✓						✓
Conflict Management	✓						✓

Table 2

Descriptions of each team participating in the teamwork training study.

Team	Condition	Sport	Sex	*N* players	Age (*M* ± *SD*)	Competitive level
1	Experimental	Basketball	M	15	16.6 ± 0.5	Local elite
2	Experimental	Hockey	M	19	18.6 ± 1.2	Local elite
3	Experimental	Rugby	F	24	26.1 ± 5.0	Local elite
4	Experimental	Basketball	F	12	16.0 ± 0.0	Local elite
5	Experimental	Basketball	F	13	15.5 ± 0.7	Local elite
6	Experimental	Basketball	F	11	14.8 ± 0.5	Local elite
7	Control	Volleyball	M	16	19.8 ± 1.7	University
8	Control	Water Polo	M/F	19	14.8 ± 0.6	Local elite
9	Control	Water Polo	M/F	15	13.0 ± 0.0	Local elite
10	Control	Basketball	F	8	13.1 ± 0.4	Local elite
11	Control	Soccer	M	18	14.5 ± 0.5	Local elite
12	Control	Soccer	F	17	13.3 ± 0.5	Local elite

Note. All ‘local elite’ teams were rep teams competing against other teams in the lower mainland of British Columbia.

Table 3

Mean scores for each team and condition at three timepoints of teamwork training study.

	Baseline Scores					**Week 5 Scores**					**Week 10 Scores**				
Condition (Team)	Prep	Exec	Eval	Adj	MTM	Prep	Exec	Eval	Adj	MTM	Prep	Exec	Eval	Adj	MTM
Experimental (1)[a]	5.70	4.86	5.48	4.92	4.71	6.31	**5.90**	6.31	5.88	5.71	–	–	–	–	–
Experimental (2)[a]	4.99	4.29	4.72	3.95	4.16	5.44	**5.05**	5.24	4.99	5.12	–	–	–	–	–
Experimental (3)[b,a]	5.04	5.78	5.89	5.72	5.99	**6.08**	5.95	6.10	6.21	6.16	6.00	**5.92**	6.19	6.15	6.54
Experimental (4)[b,c]	4.27	4.68	4.54	4.43	4.73	**5.81**	5.39	5.80	5.18	5.02	5.99	5.11	5.71	5.27	**5.78**
Experimental (5)[b,d]	4.16	4.36	4.53	4.39	4.37	**5.39**	4.60	5.17	4.93	4.71	5.09	5.93	5.02	**4.90**	4.76
Experimental (6)[c,a]	5.50	5.32	4.66	4.89	4.37	5.91	5.50	5.63	5.78	**5.49**	6.20	**5.96**	6.09	6.11	6.23
Condition Mean	*4.94*	*4.88*	*4.70*	*4.72*	*4.72*	*5.82*	*5.40*	*5.71*	*5.49*	*5.37*	*5.82*	*5.73*	*5.75*	*5.61*	*5.83*
Control (7)	4.82	5.28	5.48	5.28	5.24	5.23	5.39	5.83	5.42	5.16	–	–	–	–	–
Control (8)	4.51	3.61	4.25	3.90	4.16	4.05	3.67	4.19	3.83	4.07	3.91	4.87	5.01	5.08	4.29
Control (9)	4.75	4.32	5.27	5.11	5.40	4.69	4.65	4.85	4.80	5.30	5.05	4.90	5.09	5.49	5.65
Control (10)	5.09	4.70	4.40	4.39	4.58	4.80	4.79	4.39	4.53	4.68	4.22	4.01	4.25	4.56	4.55
Control (11)	5.81	5.92	6.26	6.07	6.13	5.98	5.67	6.15	6.00	5.84	5.95	5.66	5.91	5.97	5.65
Control (12)	5.77	5.31	5.42	5.24	5.28	5.58	5.62	5.47	5.54	5.50	5.37	5.32	5.44	5.35	5.06
Condition Mean	*5.13*	*4.86*	*5.18*	*5.00*	*5.13*	*5.05*	*4.97*	*5.13*	*5.02*	*5.09*	*4.90*	*4.95*	*5.14*	*5.29*	*5.17*

Note. Scale scores range from 1-7. The first letter shown next to each experimental team denotes the training activity done at the week 2 training session, while the second letter indicates the activity done at the booster training session at week 6; [a] team received simulation-based teamwork training; [b] team participated in team goal setting activity (and encouraged to utilize briefing and debriefing throughout their season); [c] team participated in team charter activity; [d] team participated in individual goal setting activity. The bolded values in the columns under 'Week 5 Scores' indicate the score of the specific aspect of teamwork that was targeted through the supplemental training strategy at the team's first training session (week 2); the bolded values in the columns under 'Week 10 Scores' indicate the specific aspect of teamwork that was targeted through the supplemental training strategy at the second training session (week 6).

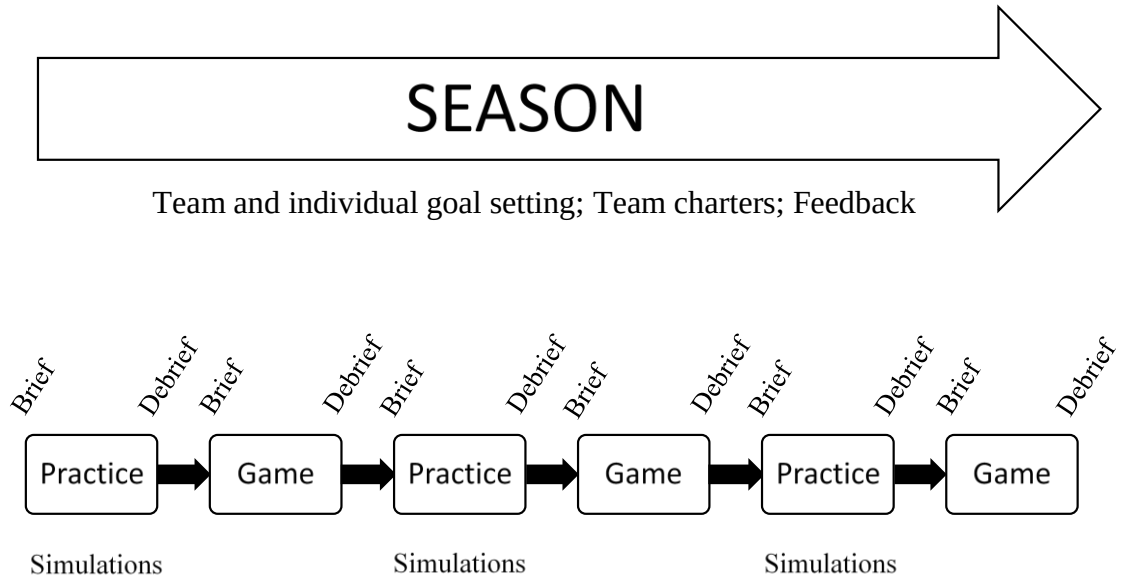
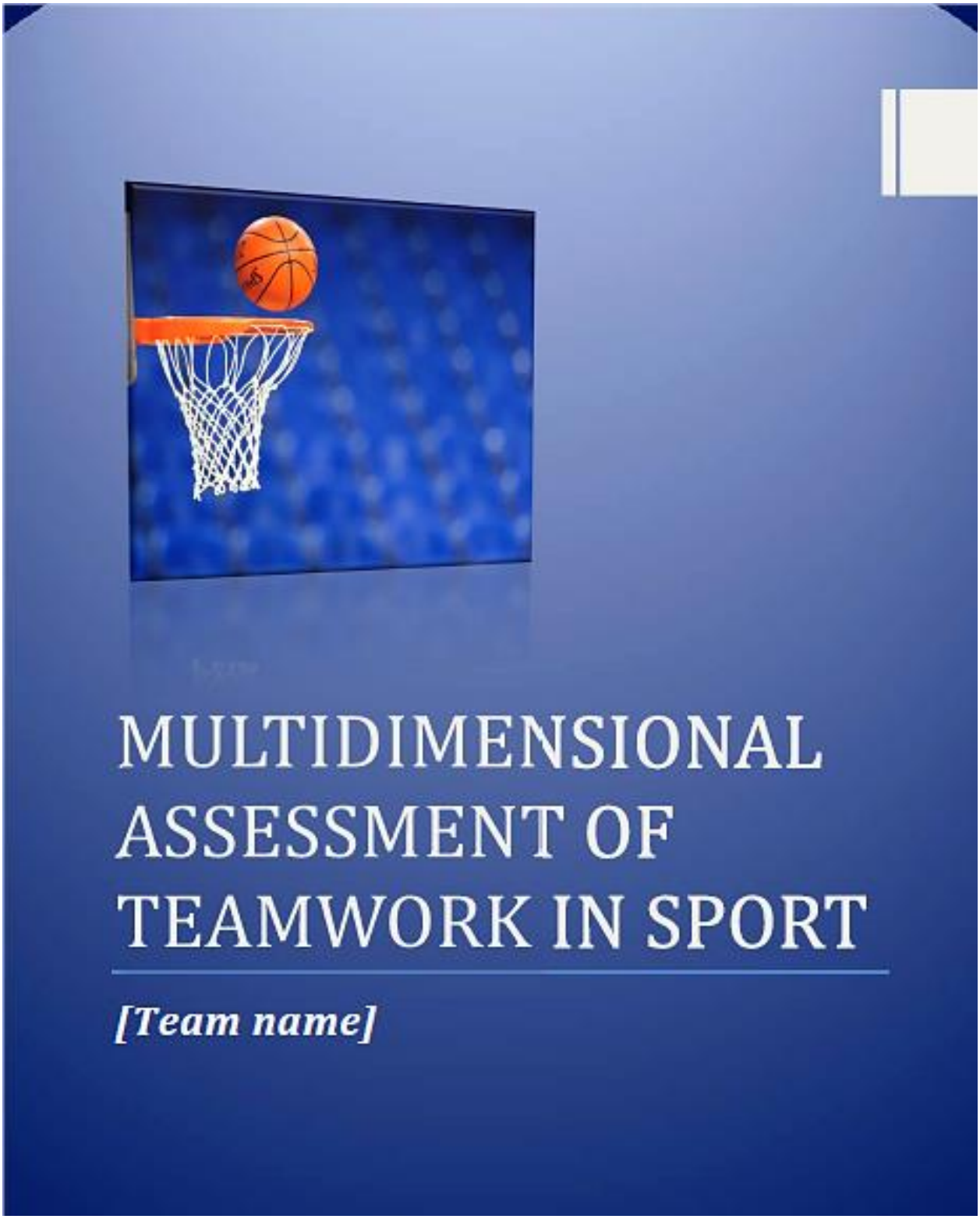


Figure 1. Conceptual model of teamwork training in sport settings. Note that although (for ease of reading) team briefs and debriefs are shown to occur before and after practices/games, these strategies can be implemented during these episodes as well, such as during timeouts or other breaks in action.

Appendix A: Sample Teamwork Training Workbook



Teamwork Training Handbook

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Funding:

University of British Columbia

Social Sciences & Humanities Research Council of Canada

OVERVIEW: What is Teamwork?

Teamwork consists of 14 total dimensions—12 aspects relate to behaviours that focus on *team performance*, while the other 2 reflect *interpersonal dynamics* amongst teammates. Your results are broken down into five sections. The first section (*Preparation*) reflects behaviours that occur before/in preparation for team competitions (e.g., games/tournaments). The second section (*Execution*) focuses on behaviours that occur while you are actually competing/performing your sport. The next two sections involve reflective behaviours that occur after/in response to the team's competitions—the *Evaluation* section relates to monitoring the team's performance and any conditions that may affect the team, while the *Adjustments* section focuses on modifications the team makes in response to the team's evaluation. The final section (*Interpersonal Dynamics*) focuses on behaviours concerned with supporting one another and resolving conflicts.

PREPARATION

A. Mission analysis: The overall purpose/mission of the team (e.g., to win a league championship, to qualify for an event/tournament/playoff round, to have fun).
B. Goal specification: Outcome/performance goals that are set in order to fulfil the team's mission (e.g., number of runs scored and conceded in baseball, race times in rowing, percentage of legal body checks in lacrosse).
C. Action planning: Strategies/plans of action that are created in order to achieve the team's outcome/performance goals and, in turn, the overall mission (e.g., tactics/strategies for an upcoming competition, drills to improve team members' skills, members' training regimens).

EXECUTION

D. Coordination: The sequencing and timing of behaviours between teammates (e.g., basketball players being in the correct position on the court when completing a play, football quarterbacks being in sync with their receivers, a track team exchanging the baton with the correct timing).
E. Cooperation: Team members working together for the team's collective benefit (e.g., rugby players working together during a scrum to advance the ball forward, basketball players helping a teammate defend his/her check, hockey players blocking an opponent's slapshot to help their team).
F. Communication: Members sharing relevant information with each other (e.g., soccer players talking to each other while defending, curling skips and sweepers exchanging information during a shot, volleyball players calling for the ball).

EVALUATION

G. Performance monitoring: Tracking the team's performance/progress (e.g., which performances have been successful and which have not, whether the team is on track to achieving its goals/purposes).
H. Conditions monitoring: Monitoring any variables that can affect the team such as important situations during competitions (e.g., the score, playing conditions), personnel changes (e.g., player injuries/replacements, coaching changes), and various external factors (e.g., available team resources, league policy changes).

ADJUSTMENTS

I. Problem solving: Collectively brainstorming and implementing solutions to problems that are preventing the team from being successful (e.g., determining why the team has been unsuccessful, noting any mistakes that have been made, identifying how the team can perform better).
J. Innovation: Introducing novel approaches to team tasks to maintain/enhance success (e.g., altering action plans, trying out new team strategies, employing different drills in practice/training).
K. Intrateam coaching: Verbal feedback between members on how they can improve/maintain performance (e.g. providing helpful advice to each other, discussing how to improve individual performance).
L. Backing up behaviours: Similar to intrateam coaching but focusing on non-verbal behaviours (e.g., showing each other things that can be done to perform better, helping each other improve skills together in practice/training).

INTERPERSONAL DYNAMICS

M. Integrative conflict management: Effectively dealing with interpersonal problems between team members (e.g., disagreements, personal differences).
N. Psychological support: Teammates helping each other with (non-performance-related) personal problems such as providing emotional support (e.g., listening to or comforting each other), esteem support (e.g., helping improve a teammate's confidence), informational support (e.g., providing advice for dealing with personal issues), and practical support (e.g., providing rides to practice).

RESULTS: How Did We Score?

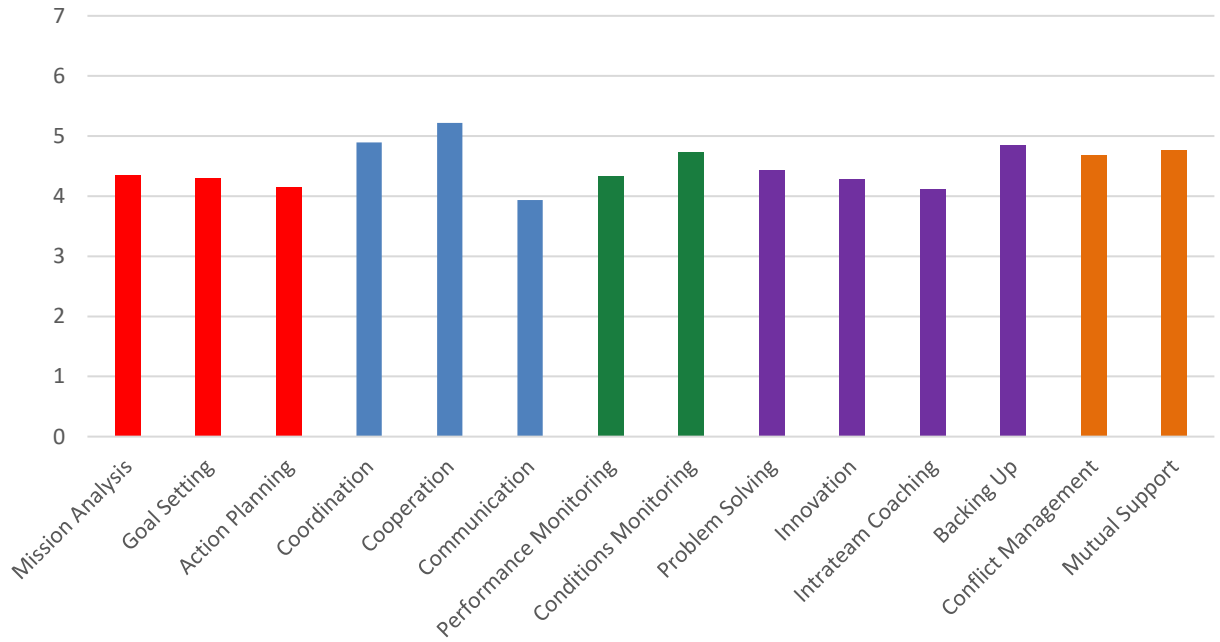
You may recall that the questionnaire asked players to respond to each item using the following scale:

1: completely disagree
2: mostly disagree
3: slightly disagree
4: neither agree nor disagree (neutral)
5: slightly agree
6: mostly agree
7: completely agree

The results presented in the following pages reflect the averages for the team's responses on each aspect of teamwork. The higher the score, the more positive the team rated that dimension of teamwork.

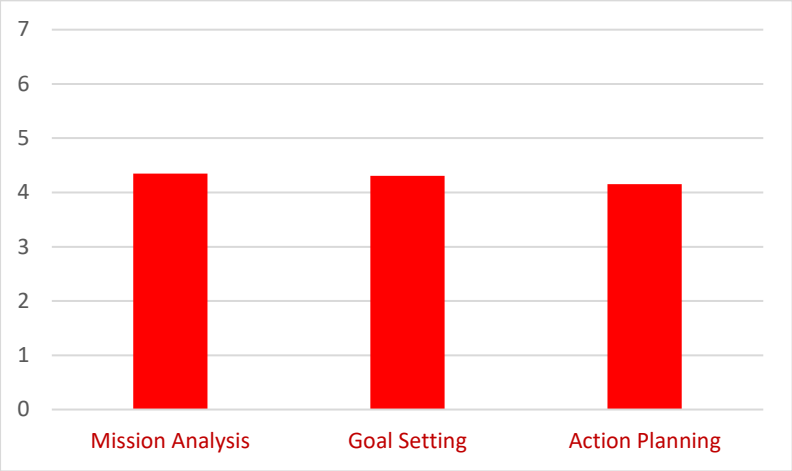
OVERALL

The next two figures show your team's overall teamwork "profile". Which aspects appear to be areas of strength? Which do you see as most in need of improvement?



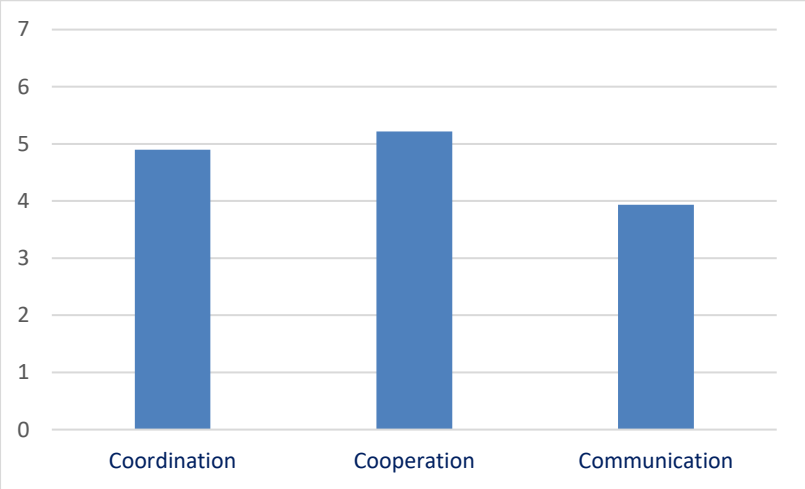
When we break things down by section, the results look like this:

PREPARATION



In terms of the team's preparation (being on the same page in terms of *what* you want to achieve and *how* you will achieve these goals), the scores were all right around the Neutral mark.

EXECUTION (ON-COURT TEAMWORK)

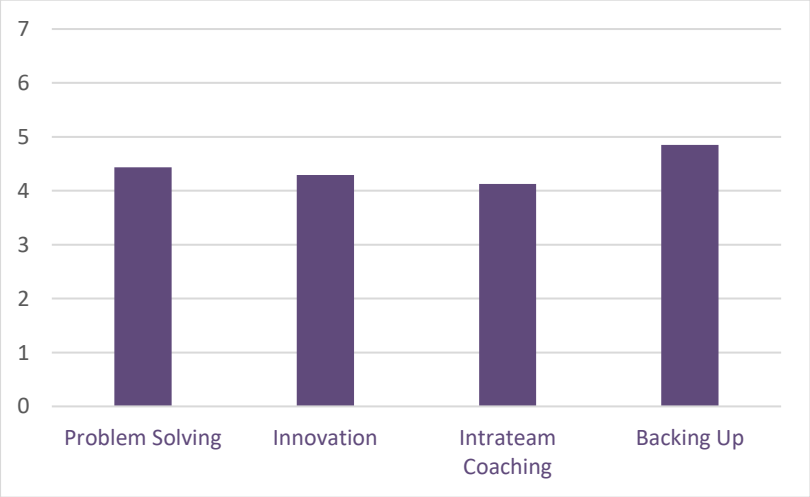


The execution behaviours—coordination, cooperation, and communication—can be thought of as the '3Cs' of teamwork. Scores for these dimensions were in the Neutral to Slightly Agree range.

EVALUATION

The evaluation phase reflects the team's monitoring of its performance (e.g., are you on the right track towards achieving your goals, which performances/games have been successful and which have not, etc.) as well as anything that may affect the team's performance (e.g., important situations in the game, changes within the team). Since you haven't played any games yet, it is not surprising that these two aspects were around the neutral mark.

ADJUSTMENTS



The adjustments phase reflects how well the team adapts and responds information gathered in the evaluation phase. This includes problem solving to

determine why you've been unsuccessful, making modifications to the team's strategies/action plans if previous plans have proven ineffective (i.e., innovation), exchanging verbal feedback with each other, and helping each other improve your skills/performance. Scores for these dimensions were all in the Neutral to Slightly Agree mark.

INTERPERSONAL DYNAMICS

The final section concerns the interpersonal dynamics (not related to performance) of the team—managing conflict and providing interpersonal support to one another. Scores for both were in the Neutral to Slightly Agree range.

TRAINING TEAMWORK: Where/How Can We Improve?

Six team building strategies that have been shown to enhance various aspects of teamwork are shown below. We'll go through one/a few of these together, but feel free to practise any that you think can help your team!

	Feedback	Team Goal Setting	Individual Goal Setting	Team Charters	Simulation	Briefs	Debriefs
Mission Analysis	✓	✓	✓	✓			
Goal Specification	✓	✓	✓			✓	
Planning	✓	✓	✓			✓	
Coordination	✓				✓		
Cooperation	✓				✓		
Communication	✓				✓		
Performance Monitoring	✓	✓					✓
Systems Monitoring	✓	✓					✓
Problem Solving	✓	✓					✓
Innovation	✓	✓					✓
Intrateam Coaching	✓		✓				
Backing Up	✓		✓				
Psychological Support	✓			✓			
Conflict Management	✓			✓			

Team Goal Setting

Thinking about this season as a whole, address various questions such as:

- What is our reason for being together as a team?
- What are some specific team goals that we have?
- What are some of the key indicators of successful performance for our team?
- How will we achieve these goals? (i.e., team strategies, action plans)
- What are our strengths as a team? How can we best utilize these strengths in order to be successful?
- What areas do we need to work on in order to reach our goals?
- What does each individual commit to doing in order to help the team be successful?

Come up with a list of questions that are most appropriate for your team. All players should take time to reflect on these questions individually or in small groups (i.e., 3-4 players), thinking about what the team needs to do as a whole as well as what they need to do as individuals.

Once everyone has gone through these questions, come up with a master list consisting of your mission, goals, and action plans. Have this document available in a conspicuous space (e.g., as a poster in your locker room or in a team journal) so that you can monitor your progress throughout the season.

Sample Goal Setting Sheet

Team Mission – What is our reason for being together this season?

_____

_____

Team Goals – What are some specific team goals/indicators of performance that we are striving to obtain this season?

_____

_____

_____

_____

_____

Action Plans – What specifically do we need to do as a team and as individuals to reach our goals/mission and be successful this season?

_____

_____

_____

_____

_____

Strengths – What are our strengths as a team and how can we best utilize these strengths to be successful?

_____

_____

_____

_____

_____

Areas for improvement – What specifically do we need to improve on in order to be successful this season?

_____

_____

_____

_____

_____

Individual Goal Setting

This exercise is similar to the team goal setting but focuses on individuals' goals. Looking ahead this season, each player should identify a few personal goals that they have, taking into consideration:

- The team's goals—ensure that your personal goals fit within your team's goals
- What your role is within this team
- What your strengths are as a player and where you see areas for improvement
- How you will achieve this goal (i.e., your personal action plan)
- Where you could use help from teammates to help you improve

In addition, try to ensure that at least one of your goals focuses on teamwork. How can you help your team work well together? For example, what do you need to do in order to communicate well with your teammates while competing? Think of this as your commitment to helping your team work effectively together.

Once players have created their goals, they should share them with their teammates and coaches. Then, identify how teammates can help support each player in reaching their goals. If a hockey player, for instance, wanted to improve his/her faceoff skills, another player should volunteer to help this player during free time in practice (e.g., by practising faceoffs together). This will allow players time to improve their skills and also provides teammates with the opportunity to give advice to each other and show each other ways in which they can execute a skill effectively. This type of support is key as teammates pursue their individual goals!

Once everyone has written down their goals, sign this sheet as an indication of your commitment to this goal and to the team. Have a teammate or coach sign this as well as your "witness". Keep this document in a conspicuous place for yourself (e.g., your locker).

Sample Individual Goal Setting Sheet

Goals – What are some specific goals that I have for this season that will help my team be successful?

_____
_____
_____
_____
_____

Action Plans – What specifically do I need to do to achieve my goals?

_____
_____
_____
_____
_____

Teamwork – What do I commit to doing as an individual to help my team work well together this season?

_____
_____
_____
_____
_____

Teammate Support – Which teammates(s) will help me achieve my goal and how?

_____
_____
_____
_____
_____

_____ _____

Player Signature Teammate Signature

Team Charters

Team charters are similar to the two goal setting exercises highlighted above. However, rather than focusing on team *performance* goals, team charters provide an opportunity for teams to discuss, and ultimately agree on, members' expectations related to interpersonal dynamics.

Although not directly focused on performance, these behaviours can impact the functioning of a team. For example, players from the famous British & Irish Lions rugby union team have created 'The Lions Laws', which lays out a code of conduct and standards by which team members carry themselves (e.g., how they will support one another when players are in need, the most effective and respectful ways for resolving conflict, etc.).

When players take the time to get on the same page with regard to these types of behaviours, it helps to build team trust and open channels of communication. Every team is different so think about what types of behaviours are important for *your* team.

As with the team goal setting exercise, break into small groups (i.e., 3-4 players) to discuss these questions. Once everyone has gone through these questions, come up with a master Team Charter. Have this document available in a conspicuous space (e.g., as a poster in your locker room or in a team journal) as a reminder of these commitments that players have made.

Sample Team Charter Sheet

Team Mission – What is our team's purpose/reason for being together this season?

_____

_____

Team Conduct – How do I/we commit to conducting ourselves as members of this team (e.g., at team meetings, before/after games, in the community)?

_____

_____

_____

_____

_____

Teammate Support – What can I/we do to help support teammates?

_____

_____

_____

_____

_____

Interpersonal Conflict – If conflicts ever arise within the team, what will I/we do to resolve these issues?

_____

_____

_____

_____

_____

_____

Player Signature

Team Briefs

Team briefs are similar to the team goal setting activities highlighted above but instead of looking at the season as a whole, these briefs occur prior to a game/tournament. Essentially, this involves discussing team goals and action plans for the competition as a group. Some questions that can help facilitate these briefs include:

- What are our goals for this game?
- How will we achieve these goals?
- What are our strengths as a team?
- How can we use these strengths in our gameplan against the opposing team? Do they have any tendencies or holes in their game that we could take advantage of when we play them?
- What does effective communication, coordination, and cooperation look like for us?
- Should we have a backup plan in case the original strategies aren't working?

Think about some of the things that have worked for the team in the past and how they could be utilized now. Also, it's important that all players are involved in these conversations. These interactive discussions can help team members all get on the same page going into a tournament/game and buy in to the team concepts and strategies.

These conversations lay the foundation for the competition and provides something to come back to during the game, such as between ends (what worked in that end? did we stick to the gameplan? what should we do next end?)—we'll revisit this in the Debriefs section below.

Sample Team Brief

Team Goals – What are our main goals for this game/competition?

_____

_____

_____

Opposition – How can we use our strengths against the opposing team? Do they have any tendencies or holes in their game that we could take advantage of when we play them?

_____

_____

_____

_____

Action Plans – What do we need to focus on in order to achieve these goals?

_____

_____

_____

_____

Contingencies – Should we have a backup plan in case the original strategies aren't working?

_____

_____

_____

_____

The 3Cs of Teamwork – What does effective communication, coordination, and cooperation look like for us?

_____

_____

_____

_____

Team Debriefs

Most teams will have some sort of team meeting after a game/competition. Sometimes it is easy to be flippant about these meetings (especially after emotional games). But a common theme of high-performance teams involves approaching these debriefs in a more structured/systematic way (i.e., having a specific set of questions to reflect on).

You can probably see how these debriefs coincide with the team briefs that occur during the preparation stage—you created goals/plans of action before the game; after the game is completed, reflect on the team briefs and resulting performance. Some queries that can help guide these conversations include:

- How well did we perform as a team?
- Did we stick to our gameplan?
- Did we each perform our roles effectively?
- How well were we communicating?
- Did we support each other?
- Did we coordinate well with each other?
- If/when we were unsuccessful in certain situations, what sorts of things caused this?

These types of questions and subsequent feedback/discussions can help guide the team in the transition from reflecting on 'where we are' to 'where we want to go'. In other words, this can provide a blueprint for addressing (a) what we need to keep doing (i.e., the things that went well) and (b) what needs improvement (i.e., the things that did not go so well).

Again, it is important that all team members get involved in these conversations rather than the coach or one or two players dictating these conversations. Differing opinions can actually be a good thing, as it can help the team be comprehensive and consider a full range of perspectives. Everyone's voice is important!

By monitoring the team's progress and the various conditions that may be impacting its performance, the team can then start talking about the goals and action plans again for the next competition, taking into account its recent performance(s). For instance:

- If there are certain things that caused you to underperform (e.g., anything from poor preparation to miscommunications during competition to players struggling to execute their individual roles, etc.), how can you overcome these things going forward?
- What specifically do we need to do in order to be more effective as a team?
- Are there any innovative changes the team should make to the action plans (e.g., creative strategies) or should you stick with what you are currently doing?
- If a team member is struggling, what could they do to get back on track and—just as importantly—how can teammates help support this player?

As you go through these discussions, it's important to keep in mind that the purpose of these conversations is to help each other—thus helping the team be successful—as opposed to "calling each other out" or making one another feel bad/taking this feedback as a personal insult. Honest, open, and effective feedback is key in order for the team to continually grow. Come back to your team's mission and goals for the season and remember that you're all in this together.

Sample Team Debrief Sheet

Performance Monitoring – How well did we perform as a team?

_____
_____
_____
_____

Team Execution – Did we stick to our gameplan? Did we perform our roles effectively?

_____
_____
_____
_____

The 3Cs – Did we communicate well with each other? Were we well-coordinated? Did we support each other well and work as 'one' (as opposed to a bunch of individuals)?

_____
_____
_____
_____

Reflection – If there were situations when we didn't perform well, what caused this?

_____
_____
_____
_____

Looking Ahead – What does the team need to do to be successful in future competitions? What do we need to work on in practice as a team/individuals?

_____
_____
_____
_____

Simulations

Just as you would practise various skills, consistently take care of your nutrition, and get into the gym regularly to ensure that you are performing at your optimal level, it is also critical that you make time to practise these teamwork behaviours on a regular basis. So when you are doing various drills or scrimmages, don't just focus on the technical aspects of your performance but also be mindful of the 3Cs of teamwork execution.

But the question that teams need to first reflect on is:

What exactly does effective communication, coordination, and cooperation look like for our team?

Thus, as a first step, teams should take time to discuss these 3Cs in order to (a) ensure that the team is all on the same page in terms of what effective teamwork execution looks like, and (b) what each individual commits to doing in order to help the team work well together.

Then during practice, try to simulate various situations that may occur during games as best you can. As you practise working through these situations, be cognisant of the 3Cs and the markers of effective teamwork that your team has laid out. Reflect on these team behaviours as a coach and as a team. For example:

- Is the team working together effectively? Why or why not?
- How is the team communicating during these simulations (e.g., clearly; an ideal amount—not too much not too little; at the appropriate times; etc)?
- Is each individual completing their role appropriately (i.e., in a way that helps the team be successful)?
- Is the position of and timing between members during shots correct?

Making time to practise/be mindful of these three aspects that are necessary for the team to be successful will make you better prepared when the actual situations arise in competition.

Sample Teamwork Execution Exercise & Simulation Sheet

Reflection – What does effective communication/coordination/cooperation look like? What specific teamwork behaviours do the best teams execute while playing our sport? Which of these are strengths of our teams and which require improvement?

Team Action Planning – HOW, specifically, can our team get improve our teamwork execution behaviours? What will we do in practice to get better at these areas?

My Commitments – HOW, specifically, will I as an individual help improve our team's coordination/cooperation/communication? Considering my roles on this team, what commitments do I make to my team to help us work better together?

Further Support & Contact Info

"Learning is described as a change in behaviour. We haven't learned a thing until we can take action and use it."

If you have any questions or if we can provide your team with any further support, please feel free to contact us at any point!

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